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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/996,603	11/30/2001	John M. Belcea	42565	4108

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EXAMINER	
NGO, NGUYEN HOANG	
ART UNIT	**PAPER NUMBER**
2663	

DATE MAILED: 09/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/996,603	BELCEA, JOHN M.	
	Examiner	Art Unit	
	Nguyen Ngo	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8 and 10-17* is/are rejected.

7)☒ Claim(s) *9 and 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-5 and 10-14 are rejected under 35 U.S.C. 102(e) as being anticipated by Dive (US 6836851), hereinafter referred to as Dive.

Regarding claim 1, Dive discloses to a method for the synchronization of a first and a second module of a telecommunication system (Examiner interprets modules to be implemented on separate circuit board of specific nodes of a telecommunication network, col5 lines 39), each having a clock generator (method for determining a relationship between the timing of a local clock of a node with respect to the timing of a local clock of at least one other node in a wireless communication network, abstract). Dive further discloses;

at the beginning of synchronization (request transmission time), the module MOD1 (node) transmits the clock signal TS1 (clock information request message) generated by its clock generator to the module MOD2 (transmitting a clock information request message from said node to said other node at a request transmission time, figure 1 and col6 line 6-10).

receiving the TS1 at MOD2 and synchronizing the MOD2 clock generator with the clock signal. That certain transmission time is necessary for transmission of the clock signal TS1 from the module MOD1 to the module MOD2 and, in addition, the operation of synchronizing the clock generator of MOD2 also requires a certain processing time, and thus a clock signal TS2DEL (response message including timing information pertaining to a request reception time) is generated by the clock generator of MOD2 and MOD2 transmits the clock signal TS2DEL to the module MOD1 (receiving at said node a response message from said other node at a response reception time, said response message including timing information pertaining to a request message and response transmission time at which said other node transmitted said response message, col6 lines 10-18).

that the module MOD1 then determines a time difference value DIF1 between the clock signal TS1 and the clock signal TS2DEL it receives (calculating a difference between the timing of said local clock of said node and said local clock of said other node based on said timing information, said request transmission time and said response reception time, col6 lines 18-22).

Regarding claim 2, Dive discloses that the time difference value DIF1 is essentially due to the transmission time (propagation time) of the clock signal TS1 from module MOD1 to the module MOD2 and the transmission time of the clock signal TS2DEL from the module MOD2 to the module MOD1 (calculating a propagation time for a signal to propagate between said node and said other node based on said timing information,

said request transmission time (TS1) and said response reception time (TS2DEL), col6 lines22-26).

Regarding claim 3, Dive discloses that the module MOD1 transmits the clock signal TS1 generated by its clock generator GEN1 to the module MOD2 (request transmission time and response reception time are indicated by said local clock of said node, col6 lines 6-9) and that the clock signal TS2DEL is later generated, after reception of TS1, by the clock generator GEN2 of module MOD2 (request reception time and response transmission time are indicated by said local clock of said other node, col6 lines 14-16).

Regarding claim 4, Dive discloses;

transmitting by the first module, a first clock signal generated by its clock generator to at least one second module,

transmitting by the at least one second module (plurality of other nodes) a second clock signal generated by the clock generator to the first module,

determining by the first module, a (first) time difference value between the first clock signal and the at least one second clock signal (performs said transmitting, receiving and calculating steps to calculate a respective said difference between the timing of said local clock of said node and a respective said local clock of each of a plurality of said other nodes, col1 line 59- col2 line 3).

Regarding claim 5, Dive discloses all the limitation of claim 5 as discussed with claim. The Examiner interprets determining by the first module, a (first) time difference value between the first clock signal and the at least one (plurality) second clock signal to correlate to calculating respective said differences between the timing of respective said local clocks of each of said plurality of other nodes.

Regarding claim 10, Dive discloses to a method for the synchronization of a first and a second module of a telecommunication system (Examiner interprets modules to be implemented on separate circuit board of specific nodes of a telecommunication network, col5 lines 39), each having a clock generator (a system for determining a relationship between the timing of a local clock of a node with respect to the timing of a local clock of at least one other node in a wireless communication network, abstract). Dive further discloses;

at the beginning of synchronization (request transmission time), the module MOD1 (node) transmits the clock signal TS1 (clock information request message) generated by its clock generator to the module MOD2 (transmit a clock information request message from said node to said other node at a request transmission time, figure 1 and col6 line 6-10) and that the modules MOD1 and MOD2 be comprise of functional assemblies such as a transmitter (a transmitter, adapted to transmit a clock information request message, col5 line 66).

receiving the TS1 at MOD2 and synchronizing the MOD2 clock generator with the clock signal. That certain transmission time is necessary for transmission of the

clock signal TS1 from the module MOD1 to the module MOD2 and, in addition, the operation of synchronizing the clock generator of MOD2 also requires a certain processing time, and thus a clock signal TS2DEL (response message including timing information pertaining to a request reception time) is generated by the clock generator of MOD2 and MOD2 transmits the clock signal TS2DEL to the module MOD1 (receive at said node a response message from said other node at a response reception time, said response message including timing information pertaining to a request message and response transmission time at which said other node transmitted said response message, col6 lines 10-18) and that the modules MOD1 and MOD2 be comprise of functional assemblies such as a receiver (a receiver adapted to receive at said node a response message, col5 line 66).

that the module MOD1 then determines a time difference value DIF1 between the clock signal TS1 and the clock signal TS2DEL it receives (calculating a difference between the timing of said local clock of said node and said local clock of said other node based on said timing information, said request transmission time and said response reception time, col6 lines 18-22) and that the modules MOD1 and MOD2 be comprise of logic components CP1 and CP2 such as signal processors (a processor, adapted to calculate the difference, col5 lines 63-34).

Regarding claim 11, Dive discloses that the time difference value DIF1 is essentially due to the transmission time (propagation time) of the clock signal TS1 from module MOD1 to the module MOD2 and the transmission time of the clock signal TS2DEL from

the module MOD2 to the module MOD1 (calculating a propagation time for a signal to propagate between said node and said other node based on said timing information, said request transmission time (TS1) and said response reception time (TS2DEL), col6 lines22-26) and that the logic components CP1 and CP2 each comprise a comparator assembly for determining the difference between the two clock signals (processor, col5 lines 60-61).

Regarding claim 12, Dive discloses that the module MOD1 transmits the clock signal TS1 generated by its clock generator GEN1 to the module MOD2 (request transmission time and response reception time are indicated by said local clock of said node, col6 lines 6-9) and that the clock signal TS2DEL is later generated, after reception of TS1, by the clock generator GEN2 of module MOD2 (request reception time and response transmission time are indicated by said local clock of said other node, col6 lines 14-16).

Regarding claim 13, Dive discloses;

transmitting by the first module, a first clock signal generated by its clock generator to at least one second module by the transmitter of the module,

transmitting by the at least one second module (plurality of other nodes) a second clock signal generated by the clock generator to the receiver of the first module,

determining by the first module, a (first) time difference value between the first clock signal and the at least one second clock signal by the logic component of the module (transmitter, receiver, and processor perform transmitting, receiving, and

calculating a respective said difference between the timing of said local clock of said node and a respective said local clock of each of a plurality of said other nodes, col1 line 59- col2 line 3).

Regarding claim 14, Dive discloses all the limitation of claim 5 as discussed with claim. The Examiner interprets determining by the first module, a (first) time difference value between the first clock signal and the at least one (plurality) second clock signal to correlate to calculating respective said differences between the timing of respective said local clocks of each of said plurality of other nodes. Dive further discloses this calculation be implemented in the logic component of the module (CP1, processor).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 6-8 and 15-17 rejected under 35 U.S.C. 103(a) as being unpatentable over Dive (US 6836851), in view of Crosbie et al. (US 2002/0114303), hereinafter referred to as Dive and Crosbie.

Regarding claim 6, Dive fails to disclose the specific limitations of claim 6, more specifically of the network being an ad-hoc communication network. Dive however discloses that in the field of telecommunications, there is a need for modules to operate synchronously, thus using "clock signals", to effectively transfer data among points in the telecommunication system, thus providing the motivation of using a clock signal to synchronize nodes in a system.

Crosbie however discloses of a wireless local access network which includes a hierarchy of access points and mobile devices capable of roaming among the access points and further discloses that the intermediary access point synchronizes its clock with its master, and then provides the same synchronization to any lower level slaves (abstract). Crosbie further discloses the method of wireless synchronization be implemented into a Bluetooth network comprising access points and mobile devices that support wireless technology and communication protocols, such as the Bluetooth protocol (network includes an ad-hoc communication network, and said node and said other nodes adapted for use with said ad-hoc communication network, and said node is a mobile node, and said other node is a mobile node, page1 [0007] and page3 [0031]).

It should thus be obvious to a person skilled in the art to incorporate the method for the synchronization of a first and a second module (nodes), each having its own clock generator disclosed by Dive into the specific Bluetooth network in need of wireless synchronization as disclosed by Crosbie in order to effectively synchronize the nodes of a wireless communication network (Bluetooth) in order to correctly transfer data transmissions among the nodes.

Regarding claim 7, Dive and Crosbie discloses all the limitation of claim 7 as disclosed with claim 6.

Regarding claim 8, Dive and Crosbie discloses all the limitation of claim 8 as disclosed with claim 6.

Regarding claim 15, Dive fails to disclose the specific limitations of claim 15, more specifically of the network being an ad-hoc communication network. Dive however discloses that in the field of telecommunications, there is a need for modules to operate synchronously, thus using "clock signals", to effectively transfer data among points in the telecommunication system, thus providing the motivation of using a clock signal to synchronize nodes in a system.

Crosbie however discloses of a wireless local access network which includes a hierarchy of access points and mobile devices capable of roaming among the access

points and further discloses that the intermediary access point synchronizes its clock with its master, and then provides the same synchronization to any lower level slaves (abstract). Crosbie further discloses the method of wireless synchronization be implemented into a Bluetooth network comprising access points and mobile devices that support wireless technology and communication protocols, such as the Bluetooth protocol (network includes an ad-hoc communication network, and said node and said other nodes adapted for use with said ad-hoc communication network, and said node is a mobile node, and said other node is a mobile node, page1 [0007] and page3 [0031]).

It should thus be obvious to a person skilled in the art to incorporate the method for the synchronization of a first and a second module (nodes), each having its own clock generator disclosed by Dive into the specific Bluetooth network in need of wireless synchronization as disclosed by Crosbie in order to effectively synchronize the nodes of a wireless communication network (Bluetooth) in order to correctly transfer data transmissions among the nodes.

Regarding claim 16, Dive and Crosbie discloses all the limitation of claim 16 as disclosed with claim 15.

Regarding claim 17, Dive and Crosbie discloses all the limitation of claim 17 as disclosed with claim 15.

Allowable Subject Matter

6. Claims 9 and 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Claim 9 and 18 is allowable due to the further limitations of calculating a subsequent transmission time at which said local clock of said other node was reading when said other node transmitted said subsequent signal based on said calculated difference and comparing said subsequent transmission time to a time representing a beginning of a time slice to determine a propagation time for said subsequent signal to propagate between said other node and said node.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a) Robie, JR. et al. (US 2003/0048811), Methods, Systems, and Computer Program Products For Synchronizing Clocks Of Nodes On A Computer Network.

b) Shahidi et al. (US 6826161), Slewing Detector System And Method For The Introduction Of Hysteresis Into A Hard Handoff Decision.

c) Van Der Putten et al. (US 6754235), Transmitter and Receiver For A Very High Speed Digital Subscriber Line.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen Ngo whose telephone number is (571) 272-8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

N.N.
***

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United States Patent & Trademark Office
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RICKY NGO
PRIMARY EXAMINER
9/6/05